APPENDIX - CLAIMS

1. (Currently Amended) A method consisting of forming an admixture consisting of:
a solvent selected from the group consisting of n-cyclohexylpyrrolidinone, dimethylenepropylene urea and N,N dimethyl propylene urea;
plasticizer additive selected from the group consisting of:
poly-co-dimethyl aminopropyl siloxane, polyglycol diacid, 3,6,9 trioxaundecanoic acid, polyethylene ~~gloycol~~ glycol tetrahydro furfuryl ether, glycerol triacetate and epoxidized soy bean oil;
~~said solvent being different from said additive~~ and
an electrically conductive conjugated polymer selected from the group consisting of substituted and unsubstituted polyparaphenylene vinylenes, polyparaphenylenes, polythianaphthenes, polyanilines, polythiophenes, polyazines, polyfurans, polypyrroles, polyselenophenes, poly-p-phenylene sulfides, polyacetylenes,
a precursor to an electrically conductive conjugated polymer selected from the group consisting of substituted and unsubstituted polyparaphenylene vinylenes, polyparaphenylenes, polythianaphthenes, polyanilines, polythiophenes, polyazines, polyfurans, polypyrroles, polyselenophenes, poly-p-phenylene sulfides, polyacetylenes;
said precursor to said electrically conductive conjugated polymer being made electrically conductive by means of a doping reaction; said doping reaction consisting of exposing said precursor to said electrically conductive conjugated polymer to an acid-containing solution selected from the group consisting of citric acid and acrylamidopropanesulfonic acid to form an electrically conductive conjugated polymer;

said electrically conductive conjugated polymer being dissolved in said solvent at a concentration that allows said electrically conductive conjugated polymer to be dissolved in said solvent;
said electrically conductive conjugated polymer not being substantially soluble in said plasticizer additive in the absence of said solvent;
said plasticizer additive provides local mobility to said electrically conductive conjugated polymer to allow regions of said electrically conductive conjugated polymer to associate with one another to achieve a crystalline state; and

removing or partly removing said solvent, substantially leaving said additive therein as remaining additive, said remaining additive provides local mobility to said electrically conductive conjugated polymer to achieve said crystalline state thereby comprising a polycrystalline material;

said polycrystalline material is characterized by a degree of crystallinity regions and a degree of amorphous regions, said degree of crystallinity regions and said degree of amorphous regions are selected by selecting the composition of said additive, and the amount of said additive;

forming a film via a technique selected from the group consisting of spin-coating or solution casting from said admixture, said resulting film possessing isotropic conductivity.

2. – 19. (Canceled)

20. (Currently Amended) A method according to claim 1, wherein said plasticizer additive ~~plasticizer~~ deaggregates said polymer.

21. (Canceled)

22. (Previously Presented) A method according to claim 1, wherein said solvent is extracted from said admixture by a technique selected from the group consisting of solvent extraction and evaporation.

23. (Currently Amended) A method according to claim 1, wherein said plasticizer additive is first added to a solvent and thereafter an electrically conducting polyaniline is added which becomes neutralized upon addition to said admixture.

24. – 46. (Canceled)

47. (Withdrawn) The method according to Claim 53 wherein said solvent is NMP and said additive is expoxidized soybean oil.

48. (Withdrawn) The method according to Claim 53 wherein said solvent is NMP and said additive is poly-co-dimethyl amino-siloxane.

49. (Withdrawn) The method according to claim 53, wherein said solvent is NMP and said additive is poly glycol diacid.

50. (Withdrawn) The method according to claim 53, wherein said solvent is NMP and said additive is 3, 6, 9-trioxaundecanoic acid.

51. (Withdrawn) The method according to claim 53, wherein said solvent is NMP and said additive is poly(ethylene glycol) tetrahydrofurfuryl ether.

52. (Withdrawn) The method according to claim 53, wherein said solvent is NMP and said additive is glycerol triacetate.

53. (Withdrawn) The method defined in Claim 7, comprising forming an admixture of:
a solvent selected from the group consisting of NMP, m-Cresol and a combination of NMP/m- cresol;
an additive selected from the group consisting of poly-co-dimethyl, amino siloxane, poly glycol diacid, 3, 6, 9-trioxaundecanoic acid, poly(ethylene glycol) tetrahydrofurfuryl ether, glycerol triacetate, and epoxidized soy bean oil;
polyaniline;
said polyaniline being soluble in said solvent, said polyaniline not being substantially soluble in said additive in the absence of said solvent; said additive provides local mobility to said polymer to allow said polymer to associate with one another to achieve a crystalline state; and removing or partly removing said solvent, substantially leaving said additive therein as remaining additive, said remaining additive provides local mobility to said polyaniline to achieve said crystalline state thereby comprising a polycrystalline

material, said polycrystalline material is characterized by a degree of crystallinity regions and a degree of amorphous regions, said degree of crystallinity regions and said degree of amorphous regions are selected by selecting the composition of said additive, and the amount of said additive;
said admixture being electrically conductive and having an isotropic electrical conductivity.

54. (Withdrawn) A method comprising forming an admixture of:
a solvent selected from the group consisting of DMSO, DMF, NMP, dimethylene propylene urea, tetramethyl urea, pyridine, toluene, m-Cresol, phenol, dimethylacetamide, n-cyclohexylpyrrolidinone, 80% aqueous acetic acid, 60 - 88% aqueous formic acid, pyrrolidinone, N, N' dimethyl propyl urea, benzyl alcohol, and a combination of NMP/m-cresol;
an additive selected from the group consisting of Adipic acid, Azelaic acid, Benzoic acid, Citric acid, Dimer acid, Epoxy, Fumaric acid, Glycerol, Isobutyrate, Lauric acid, Linoleic acid, Maleic acid, Sebacic acid, Stearic acid, Succinic acid, Sulfonic acid, Terpentines, Siloxanes, Polysiloxanes, Ethylene glycols, Polyethylene glycols, Polyesters, Sucrose, Mellitates, Myristic acid, Oleic acid, Palmitic acid, Paraffin, Phosphoric acid, Phthalic acid, Ricinoleic acid, Tartaric acid, Trimellitic acid, Glycol, Glycolates, Hydrocarbons, Phosphonic acid, and Polysilanes,
said solvent being different from said additive and
a polymer selected from the group consisting of a precursor to an electrically conductive polymer and an electrically conductive polymer, said precursor to said electrically conductive polymer being made electrically conductive by means of a doping reaction with an acid, said polymer being selected from the group consisting of substituted and unsubstituted polyparaphenylene vinylenes, polyparaphenylenes, polyanilines, polythiophenes, polyazines, polyfurans, polypyrroles, polyselenophenes, poly-p-phenylene sulfides, polyacetylenes formed from soluble precursors, combinations thereof and blends thereof with other copolymers of the monomers thereof.; said polymer being soluble in said solvent, said polymer not being substantially soluble in said additive in the absence of said solvent; said additive provides local mobility to said polymer to allow

regions of said polymer to associate with one another to achieve a crystalline state; and removing or partly removing said solvent, substantially leaving said additive therein as remaining additive, said remaining additive provides local mobility to said polymer to achieve said crystalline state thereby comprising a polycrystalline material, said polycrystalline material is characterized by a degree of crystallinity regions and a degree of amorphous regions, said degree of crystallinity regions and said degree of amorphous regions are selected by selecting the composition of said additive, and the amount of said additive; forming a film from said admixture, said film possessing isotropic conductivity.

55. (Withdrawn) The method defined in Claim 54 wherein said solvent is cresol, said polymer is polyaniline and said additive is poly-eo-dimethyl propylamine siloxcme. a composition that provides local mobility to said polymer to allow regions of said conjugated diene polymer to associate with one another to achieve a crystalline state.

56. (Withdrawn) The method defined in Claim 54 wherein said solvent is NMP/cresol, said polymer is polyaniline and said additive is poly-co-dimethyl propylamine siloxane and is a composition that provides local mobility to said polymer to allow regions of said conjugated diene polymer to associate with one another to achieve a crystalline state.

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57. (New) A method consisting of forming an admixture consisting of:
a solvent selected from the group consisting of n-cyclohexylpyrrolidinone, dimethylenepropylene urea and N,N dimethyl propylene urea;
plasticizer additive selected from the group consisting of:
poly-co-dimethyl aminopropyl siloxane, polyglycol diacid, 3,6,9 trioxaundecanoic acid, polyethylene glycol tetrahydro furfuryl ether, glycerol triacetate and epoxidized soy bean oil;
and
an electrically conductive conjugated polymer selected from the group consisting of substituted and unsubstituted polyparaphenylene vinylenes, polyparaphenylenes, polyanilines, poly-p-phenylene sulfides, polyacetylenes,

a precursor to an electrically conductive conjugated polymer selected from the group consisting of substituted and unsubstituted polythianaphthenes polythiophenes, polyazines, polyfurans, polypyrroles, polyselenophenes,

said precursor to said electrically conductive conjugated polymer being made electrically conductive by means of a doping reaction; said doping reaction consisting of exposing said precursor to said electrically conductive conjugated polymer to an acid-containing solution selected from the group consisting of citric acid and acrylamidopropanesulfonic acid to form an electrically conductive conjugated polymer;

said electrically conductive conjugated polymer being dissolved in said solvent at a concentration that allows said electrically conductive conjugated polymer to be dissolved in said solvent;
said electrically conductive conjugated polymer not being substantially soluble in said plasticizer additive in the absence of said solvent;
said plasticizer additive provides local mobility to said electrically conductive conjugated polymer to allow regions of said electrically conductive conjugated polymer to associate with one another to achieve a crystalline state; and

removing or partly removing said solvent, substantially leaving said additive therein as remaining additive, said remaining additive provides local mobility to said electrically conductive conjugated polymer to achieve said crystalline state thereby comprising a polycrystalline material;

said polycrystalline material is characterized by a degree of crystallinity regions and a degree of amorphous regions, said degree of crystallinity regions and said degree of amorphous regions are selected by selecting the composition of said additive, and the amount of said additive;

forming a film via a technique selected from the group consisting of spin-coating or solution casting from said admixture, said resulting film possessing isotropic conductivity.